

REMARKS

Reconsideration of this application as amended is respectfully requested. Claims 1-50 remain pending. The remarks below in connection with the claim rejections refer to the claims as amended herein.

Statement of Substance of Examiner Interview

In a 6/27/2007 telephonic interview between applicant's representative¹ and the Examiner in the above-identified application, distinctions were discussed between applicant's claim 9 and reference to Khanna (U.S. Patent No. 6,539,455). The Examiner agreed that the cited portions of Khanna do not meet all the limitations of claim 9. The Examiner further agreed to reconsider applicant's position and, in a following Office Action, either point with specificity where all of the claim limitations are disclosed in Khanna or withdraw the rejection in view of Khanna.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 3-5, 9, 10, 13, 14, 18, 20, 23, 35, 36, 40, 46, 47, 49, and 50 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,539,455 to Khanna et al. ("Khanna") and further in view of U.S. Patent No. 5,467,349 to Huey et al. ("Huey"), U.S. Patent No. 6,521,994 to Huse et al. ("Huse"), and U.S. Patent No. 6,230,236 to Schultz et al. ("Schultz"). Applicant respectfully disagrees with the reasons for rejection.

Claim 1 recites, in part:

a first CAM device having a priority number output, a first enable input, a CAM core to output a local match address, and a cascade logic circuit to output the local match address from the first CAM device in response to assertion of a first enable signal at the first enable input;

Schultz discloses a CAM chip coupled to receive a propagation-in hit signal, wherein the propagation-in hit signal is logically ANDed with a hit signal and an internal self-timed signal to produce a match address enable signal. The match address enable

signal is provided to a transfer gate, thus preventing a match address signal from passing through the gate when the match address enable signal is low (Schultz, col. 6 lines 3-21, Fig. 5). Applicant submits that only the propagation-in hit signal is received at an input to the CAM chip of Schultz. Thus, even assuming *arguendo* that the match address enable signal of Schultz constitutes a first enable signal, as suggested in the Office Action, Schultz still does not disclose a CAM device that outputs a local match address in response to assertion of the match address enable signal *at a first enable input to the CAM device*, but rather that the match address enable signal is *generated within the CAM device* based on internal logic circuitry. In view of this clear distinction, applicant submits that Schultz does not disclose or suggest the above-recited limitation of claim 1.

Applicant submits that Khanna, Huey and Huse also do not disclose the above-recited limitation of claim 1 and thus that, even if Khanna, Huey, Huse, and Schultz could be combined in the manner proposed in the Office Action, the combination would still lack at least the above-recited limitation of claim 1 and therefore would not have rendered claim 1, nor dependent claims 3-5, obvious.

Claim 9 recites, in part:

a third CAM device coupled to receive the winning priority value from the second CAM device and configured to output a first enable signal to the second CAM device if the winning priority value has a higher priority than a third priority value.

Khanna discloses that cascade up/down outputs are asserted by each CAM regardless of whether the longest prefix was determined for a match address within the CAM or received from a previous CAM (Khanna col. 23, lines 31-28 and 54-60). Thus, Khanna does not disclose or suggest a third CAM device “configured to output a first enable signal to the second CAM device *if the winning priority value has a higher priority than a third priority value*” as in the above-recited limitation of claim 9. Applicant submits that this is a clear distinction between claim 9 and Khanna and further that Huey and Huse also do not disclose the above-recited limitation. Accordingly, even

¹ Applicant was represented in the interview by Mr. Charles Shemwell (Reg. No. 40,171), attorney of record, and Mr. Yi-peng Li (Reg. No. 60,595).

if Khanna, Huey, and Huse could be combined in the manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 9, nor dependent claims 10, 13, 14, 18, and 20, obvious.

Claim 35 recites, in part:

outputting an enable signal to the second CAM device if the remote priority value has a higher priority than the local priority value;

Applicant submits that, for at least the reasons discussed above in reference to claim 9, even if Khanna, Huey, Huse, and Schultz could be combined in the manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 35, nor dependent claim 36, obvious.

Claim 40 recites, in part:

comparing a third priority value with the highest priority one of the first and second priority values within a third CAM device and, if the highest priority one of the first and second priority values has a higher priority than the third priority value, outputting a first enable signal from the third CAM device to the second CAM device.

Applicant submits that, for at least the reasons discussed above in reference to claim 9, even if Khanna, Huey, Huse, and Schultz could be combined in the manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 40, nor dependent claims 46, 47, and 49, obvious.

Claim 50 recites, in part:

means for outputting an enable signal to the first other CAM device if the remote priority value has a higher priority than the local priority value;

Applicant submits that, for at least the reasons discussed above in reference to claim 9, even if Khanna, Huey, Huse, and Schultz could be combined in the manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 50 obvious.

Claim 2 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Khanna, Huey, Huse, Schultz, and further in view of the ‘Background of Invention’ section of the current application (“applicant’s background”).

Applicant’s background discloses two divergent approaches to a CAM system: the first is a master-slave approach wherein a master CAM device receives a priority number from each of N slave devices, and wherein the master CAM device compares all the slave-supplied priority numbers with its own local priority number to determine a priority winner (applicant’s background, Paragraph [0009], Fig. 2); the second is an up/down priority number rippling approach, similar to the embodiment disclosed in Khanna, wherein each CAM device in the system can determine whether it has the highest priority match by comparing its local priority number with a winning priority number from a previous CAM device (applicant’s background, Paragraphs [0006] to [0008], Fig. 1). Applicant’s background further provides insight regarding the scalability limitations of both approaches; that as the number of cascaded devices increases, pin allocation becomes problematic in the master-slave approach, and match resolution time suffers in the ripple approach. Applicant submits that this insight is provided primarily to explain the inventors’ motivation and does itself constitute prior art. To the contrary, any reliance on applicant’s teaching in this regard would amount to impermissible hindsight, in that elements would be picked from the two divergent approaches based on applicant’s own teaching and not based on any teaching inherent in such approaches or generally known in the art. Accordingly, neither Khanna nor applicant’s background discloses the above-recited limitation, and it would be improper to use applicant’s own teaching to derive the limitations of claim 2 from such references. Therefore claim 2 is not obvious in view of the suggested combination of applicant’s background and Khanna.

Claims 21, 22, 25-27 and 28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Huse in view of applicant’s background.

Claim 21 recites, in part:

a cascade logic circuit coupled to the CAM core to receive the local priority number and having an input to receive at least one remote priority number from another CAM device, the cascade logic circuit being configured to compare the local priority number and the at least one remote priority number at one of a plurality of different times according to a control value.

Applicant submits that applicant's background does not disclose "a cascade logic circuit being configured to compare the local priority number and the at least one remote priority number *at one of a plurality of different times according to a control value*," and further that Huse also does not disclose this limitation. Accordingly, even if applicant's background and Huse could be combined in a manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 21 nor dependent claims 22, 25-27, and 28 obvious.

Claim 23 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Huse and applicant's background, and further in view of Khanna and Huey.

Applicant submits that, for at least the reasons discussed above in reference to claim 2, neither Khanna nor applicant's background discloses the above-recited limitation, and it would be improper to use applicant's own teaching to derive the limitations of claim 23 from such references. Therefore, claim 23 is not obvious in view of the suggested combination of applicant's background and Khanna.

Claim 24 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's background and Huse, and further in view of U.S. Patent No. 6,324,087 to Pereira et al. ("Pereira").

Claim 24 depends from claim 21 and therefore also includes the above-recited limitation of claim 21. Applicant submits that, as discussed above in reference to claim 21, neither Huse nor applicant's background discloses the above-recited limitation, and applicant further submits that Pereira also does not disclose the above-recited limitation. Accordingly, even if Huse, applicant's background, and Pereira could be combined in the

manner proposed in the Office Action, the combination would still lack at least the above-recited limitation and therefore would not have rendered claim 24 obvious.

Allowable Subject Matter

Claims 30-34 have been allowed.

Claims 6-8, 11, 12, 15-17, 19, 29, 37-39, 41-45 and 48 have been objected to as dependent upon a rejected base claim, but indicated to be allowable if rewritten in independent form to include all the limitations of their respective base claims and any intervening claims. In view of the foregoing remarks, applicant respectfully requests to rewrite such claims at this time.

In Conclusion

Applicant respectfully submits that all pending claims are in condition for allowance. If a telephone interview would be helpful in any way, the examiner is invited to call the undersigned attorney.


If an extension of time is due in connection herewith, applicant hereby petitions for such extension of time.

Authorization is hereby given to charge deposit account 501914 for any fee due in connection herewith, including any fee due for extension of time.

Respectfully submitted,

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Date June 28, 2007


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